

Docket No. 251023US2S/phh



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Yoshihisa IWATA, et al.

SERIAL NO: 10/807,454

GAU:

FILED: March 24, 2004

EXAMINER:

FOR: SEMICONDUCTOR MEMORY DEVICE HAVING MEMORY CELLS INCLUDING FERROMAGNETIC FILMS AND CONTROL METHOD THEREOF

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Marvin J. Spivak

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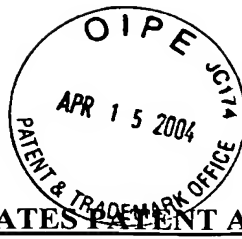
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STATEMENT OF RELEVANCY

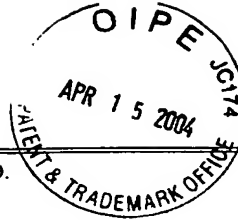
All of the references listed on Form PTO-1449 are discussed in the specification.

Reference AO (JP 8-306014) on Form PTO-1449:

This reference shows that recoding is executed by the synthesized magnetic fields from the sense line and the word line. Reading is executed by the magneto-resistive effect by the synthesized magnetic fields from the word line and the passing current from the sense line to the memory cell element.

Reference AP (WO 00/10172) on Form PTO-1449:

This reference shows that in a storage cell array, a first and second line are provided, on whose crossing point a storage element with magnetoresistive effect is disposed. A yoke is provided, surrounding one of the lines and containing magnetizable material with a permeability of at least 10.



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| Form PTO 1449 (Modified) | | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | | ATTY DOCKET NO. 251023US2S | | SERIAL NO. 10/807,454 | |
| LIST OF REFERENCES CITED BY APPLICANT | | | | APPLICANT Yoshihisa IWATA, et al. | | | |
| | | | | FILING DATE March 24, 2004 | | GROUP | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | FILING DATE IF APPROPRIATE |
| | AA | 6,005,800 | 12/21/1999 | R. H. KOCH, et al. | | | |
| | AB | 5,940,319 | 08/17/1999 | M. DURLAM, et al. | | | |
| | AC | 5,956,267 | 09/21/1999 | A. T. HURST, et al. | | | |
| | AD | 5,946,228 | 08/31/1999 | D. W. ABRAHAM, et al. | | | |
| | AE | 6,072,718 | 06/06/2000 | D. W. ABRAHAM, et al. | | | |
| | AF | 6,104,633 | 08/15/2000 | D. W. ABRAHAM, et al. | | | |
| | AG | | | | | | |
| | AH | | | | | | |
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| | AN | | | | | | |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| | | DOCUMENT NUMBER | DATE | COUNTRY | TRANSLATION YES NO | | |
| | AO | 8-306014 | 11/22/1996 | JAPAN | | | X |
| | AP | WO 00/10172 | 02/24/2000 | WIPO (with English Abstract) | | | X |
| | AQ | | | | | | |
| | AR | | | | | | |
| OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.) | | | | | | | |
| | AS | R. SCHEUERLEIN, et al., 2000 IEEE International Solid-State Circuits Conference, Session 7, TD: Emerging Memory & Device Technologies, paper TA 7.2, pages 128-129, "A 10NS READ AND WRITE NON-VOLATILE MEMORY ARRAY USING A MAGNETIC TUNNEL JUNCTION AND FET SWITCH IN EACH CELL", February 2000 | | | | | |
| | AT | K. INOMATA, et al., Jpn. J. Appl. Phys., vol. 36, part 2, no. 10B, pages L 1380- L 1383, "SPIN-DEPENDENT TUNNELING BETWEEN A SOFT FERROMAGNETIC LAYER AND HARD MAGNETIC NANOSIZE PARTICLES", October 15, 1997 | | | | | |
| | AU | M. SATO, et al., Jpn. J. Appl. Phys., vol. 36, part 2, no. 2B, pages L 200- L 201, "SPIN-VALVE-LIKE PROPERTIES OF FERROMAGNETIC TUNNEL JUNCTIONS", February 15, 1997 | | | | | |
| | AV | M. SATO, et al., IEEE Transactions on Magnetics, vol. 33, no. 5, pages 3553-3555, "SPIN-VALVE-LIKE PROPERTIES AND ANNEALING EFFECT IN FERROMAGNETIC TUNNEL JUNCTIONS", September 1997 | | | | | |
| | | | | | | <input type="checkbox"/> Additional References sheet(s) attached | |
| Examiner | | | | | Date Considered | | |
| *Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | | | | | |